

Modelling a Learning Journey towards Teacher Ecological Self

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Abstract

The article discusses the notion of the ecological self as a key concept for teacher identity construction during teacher education in the context of sustainable development (SD). Substantial amount of literature supports the understanding that the solution to the global sustainability crisis lies in the field of education where teacher identity, teacher self, plays a significant role. The paper gives the argumentation for the concept of ecological self and focuses on the question how to support the development of the ecological self during teacher education (TE). Esbjörn-Hargens & Zimmerman's model of eco-selves and Saks' model of intention are presented that could be used for that purpose. Some methods for supporting the development of an ecological self of a future teacher are also shared, for investigation and practical implementation in TE. The limitations of the present approach are obvious first and foremost due to the understanding that we are currently facing transformation in governing paradigms, change in dominating worldviews that penetrate any quest for 'truth', also in the field of science.

Keywords: teacher education, sustainable development, ecological self, deep ecology

Sustainability Crisis: A Crisis in the Self

The key field to address the global sustainability crisis is the field of education. This issue, especially in the context of values and worldviews, has been widely discussed by a myriad of authors in natural and social sciences (e.g., Meadows et al., 1972; Brown & Garver, 2009; Capra, 1983; Orr, 1992; Orr, 1994; Ehrenfeld, 2005; Macy et al., 1998/2013; Macy, 2007; Drengson & Inoue, 1995; Bartels & Parker, 2012; Jones et al., 2010; Weinstein & Turner, 2012; Hopkins, 2011; Tudge, 2007; Bowers, 1995; Kasemir et al., 2003; DuNann Winter, 2003; Harding, 2013). Sustainability or sustainable development, as used interchangeably in the present article, is literally the way for and of the future (Bartels and Parker, 2011, p.1), being a great challenge because it involves a shift as radical as the Copernican revolution (Capra & Luisi, 2014, ix) in governing paradigms, our individual and collective identities or selves, as the terms are used in the present article. Davis Orr (1992, p. 4) adds that we are facing the crisis of

spirit and spiritual resources besides our environmentally destructive way of life. The alarming fact is that the public has been flooded with ecological information as well as warning about modern sustainability crisis and yet has not dramatically altered behaviour responsible for serious eco-psycho-social problems. Additional information in and of itself is clearly not enough, we cannot continue to believe that education about the natural environment will change people's behaviour. As Ehrenfeld (2005, p. 24) warns, unsustainability is a systemic failure and should be attacked on a very fundamental level, on the level of ontology. Integral awareness of developmental dynamics and the capacity to take multiple worldviews are crucial elements in achieving behavioural changes and altering our current treatment of the biosphere (Esbjörn-Hargens & Zimmerman, 2009, p. 215). If we attempt to address the root causes of sustainability crisis in TE, we should also be aware of the challenges such an attempt brings along. Wals and Blewitt state that the more fundamental challenge was attempted to re-orient teaching, learning and research that would lead to new mental models and competencies, the more problematic such an attempt would be. Firmly established empirical and analytical frameworks are invariably reductionist and mechanistic and have come to characterise higher education (Wals & Blewitt, 2010). Hence, the conflict of worldviews and values on many levels may be foreseen in this quest. The problem with the contemporary educational establishment is not that values have been ignored. Education today is surely teaching values both explicitly and implicitly. The problem is that it is teaching of the worldviews and values of the scientific/technological society (Ireland, 2007, p. 18) and as such the re-enforcing mechanistic view of the world. Therefore, the notion of being a reflective and critical theorist and practitioner also applies to higher education settings, especially in the light of 'the Great Challenge of TE for SD'. It is equally important to reflect on the role of higher education and especially on teacher education as well as consider the whole system re-design to challenge existing unsustainable concepts and approaches in the field of education (Unesco, 2005).

Sustainability has also been described as a bridging concept between the existing western approach towards environment and development and a new emerging ecological paradigm. Stephen Sterling (2001) sees these tensions as a conflict between mechanistic and ecological views of the world, including approaches to education and teacher self, which sets a challenge for teacher education to question first the educational philosophy and its underpinnings, an ontology that penetrates our current way of thinking and viewing the world. Such a prominent layer in the foundation of the "house of teacher education" defines the whole construction of ontological, epistemological and methodological body of teacher education as such.

Ecological Ontology for TE

Underpinning ecological philosophy, ecosophy (Naess, 1973, 1987/1995) is an ontology of metaphysical holism (Nelson, 2008), which sees human and non-human world as connected and interdependent. In that context, it is worthwhile broadening the understanding of the term "ecology", which is defined by Jakob Saks (2005) in his work about integral ecology. He expands the term with three additional meanings that are important in present paper:

- the global problem of human activities endangering the Earth (planetary protection);

- a science of the dynamic balance of the co-existence of Man and Earth, (sustainable joint evolution);
- the problems of the cosmic unity of mankind and Earth (cosmic responsibility).

Therefore, the content of ecology can also be interpreted as an integral philosophy of how to preserve and protect our home, be part of the Earth and its inhabitants as a living, unified system (Saks, 2005, p. 2). The concept of integral ecology also supports the meta-paradigm of Gaia, Earth as a living organism. The theory well known as Gaia Theory developed by James Lovelock (1979) sets the locus of discussions about the transformation of our world, our societies into an inner world of a human being, a teacher in this case. As such integral philosophy directs us to ecophilosophy, ecosophy discussed by deep ecologists, e.g., Arne Naess, who see the intrinsic value of nature independently of human needs or wants.

The concept of deep ecology was formulated by Norwegian philosopher Arne Naess in the early 1970s as a response to the limits of shallow ecology. Naess (1973) rejected anthropocentrism, instrumentalist approach towards the world and other non-human forms of life. Warning that the ecological crisis threatens the survival of humanity, Arne Naess identified the deeper roots of the crisis in Western culture and in particular in the cultural values legitimising the domination of nature (Charkiewicz, et al., 1994). Hence, biocentric egalitarianism is the principle of deep ecology that regards all life having deeper value, equal right to live and blossom (Naess, 1973; Devall and Sessions, 1985; Nelson, 2008). Rooted in the ontology of connectedness and holism, Naess coined the term “ecological self”, where a human being experiences and acknowledges deep empathy towards other beings, human and non-human, sensing the interconnection and interdependence of all. Coming to such a realisation, the self widens, broadening its ontological boundaries to the rest of the lifeworld (Nelson, 2008). Naess argues that our self can be mature only when we connect to nature, see ourselves as part of nature, identifying our self with all living beings. According to Naess, such identification needs deep questioning where the understanding that we are all connected, that everything “hangs together”, as he says, is central. The notion of ecological self is manifold. Naess (1987/1995) argued that ecological self is a deepened self of a person who feels and understands that any destruction of that natural ecology is a destruction of one’s self. Seeing oneself in other, relying on reason, feeling and experiencing also means being more open to the suffering in the world. Ecological self could also be explained by the limits of the felt pain for others. If one feels sorrow, pain for the animal dying or the tree being harvested, it may be the reflection of one’s ecological self, broadening its boundaries.

Reconstructing new, more sustainable societies means reconstructing also our identities to more holistic, ecological, authentic selves, new selves. Besthorn (2002, p. 59) notes that there is the ancient origin of this new self by stating that we are seeing the re-emergence of a very old identity since many dimensions of this new self have very ancient origins. This new sense of self is important because it presupposes much more than the old categories of ego-self, social self and physical self. In fact, a new category of ecological self is arising, which changes the character of a range of different work activities. For example, the ecological self influences the specialists’ understanding of the scope and breadth of professional education. It suggests that our educational enterprise should change from being grounded in a techno-specialist, anthropocentric orientation toward an orientation, which is far more generalist and ecologically relevant. It suggests the need to adapt curriculum requirements and practicum settings to include a focus on

issues of the natural environment, e.g., integrating issues of environmental hazard and environmental racism into students' educational experiences (Besthorn, 2002, p. 62). William Pinar (1994, p. 203) brings out the related challenges set by our modern world, stating that a capitalist economy with its tendencies to commodify psycho-social processes, including personality constitution and identification, contributes actually to self-estrangement. He points out that within educational institutions there are a few prospects of "authentic being" and "authentic self-knowledge". He calls for a "return to things themselves", to the discovery of "authentic voice", which will have political as well as epistemological and pedagogical content (ibid., p. 203). Speaking of authenticity of self, Iliško (2007) states that self-formation begins with the position that each of us is born with an innate core that is authentic. As a desired end of formation of an authentic person, authenticity is seen as the genuine, real, or inner self that is whole and good (ibid., p.18), holistic and ecological. Authentic, we might say 'ecological', voice of a teacher is, therefore, the object of revelation during teacher education and it requires targeted support, time, space and reflection for that purpose.

Supporting the Development of Teacher Ecological Self in TE

Ecological, holistic view on meaningful learning in the context of ESD should be formed not only by cognitive ways of knowing but also by intuitive and spiritual knowing that is informed by cultural, environmental and community values (Badjanova et al., 2014). In the times of transformation, philosophical-ontological questioning in TE is essential. According to Mandolini (2007), philosophical questioning in pedagogy is twofold, it can be considered as a science of being (ontology), exploring some common fields with pedagogy. On the other hand, it can be considered as a precise intellectual investigative attitude, which can be used to reflect upon any experience and applied to any field (ibid., p. 6). Gedžune (2015, p. 111) says that educators should turn to philosophy for guidance on how to teach for and about sustainability and human inclusion in nature, and Mandolini (2007, p. 11) highlights that good teacher education is not attainable without considering the moral and personal backgrounds of student teachers. As TE should start with the investigation of developing student teacher identities (Raus & Falkenberg, 2014), in the context of SD we should share light on different dimensions of teacher ecological self (Naess, 1973, 1987/1995, 2005; Raus & Falkenberg, 2014) and the models that help realise the learning journey towards teacher ecological self during TE. The ecological identification process can be conceptualised as a transformational learning journey for a student teacher/a teacher (Raus & Värri, in press). Therefore, besides clarifying the understanding of ecological self and arguing for the benefit of this notion in teacher education at large, we should look at further ways of learning how to connect to individual ecological selves.

Coming from an ontological concept of holism, where the whole world is seen as the connected holistic ecological system (Esfeld, 2004) and supported by the questioning of teacher education pedagogy by Korthagen (2004, p. 77), the questions in the present context should be elaborated further:

- What should TE do so that teacher ecological self could emerge?
- What are the characteristics of TE learning process so that it supports the emergence of ecological self?

Revealing authentic selves, holistic selves, ecological selves in the process of teacher education, we prepare future teachers also to support the revelation of such authentic, ecological selves in their students. This in turn would support the development of a person, realising his/her full potential in a sustainable society. Understanding the complex interplay between the social and personal aspects of identity formation also allows for a fuller appreciation of the complexity, with which various overlapping professional roles emerge (Jarvis-Selinger et al., 2012, p. 42).

The conceptualisation of ecological identity/self-development is complex. Esbjörn-Hargens & Zimmerman (2009) focus on the work of many predecessors attempting to model the ecological identity development, e.g., Kellert, Kahn, Geselle, Cook-Greuter and many others. According to them, ecological consciousness cannot be accounted for or explained by the framework of ecology only. A successful approach to exterior ecology is dependent on the interior development of individuals towards world-centric and planet-centric identities. Just because two people share the same exterior landscape in no way means they must inhabit the same interior cognitive or moral landscape. We cannot simply dialogue ourselves into eco-awareness as they claim (Esbjörn-Hargens & Zimmerman, 2009, p. 217). Therefore, Esbjörn-Hargens and Zimmerman developed the model of 8 ecological selves, which illustrates their statement (presented in Figure 1) and describes how an individual at specific levels of ego development identifies with the aspects of natural world. Each eco-self has a unique way of relating to itself, others and the natural world, where integrally aware individuals are able to relate to all eight of these perspectives (ibid., p. 226). All these eco-selves are critically viewed as both potentially contributing and violating ecological balance. Although the model provides a useful framework for analysing environmental problems and the connection to self, these examples are not exclusionary (ibid., p. 228) and can be further developed in different contexts, especially in teacher education. Their work forms a valuable tool for negotiating evolving ecological selves of teacher students during teacher education programmes since it enables different levels of discussions and reflections connected with a diverse set of topics upon professional and free choice of teacher educators. The model below can be used as one framework for courses targeted on the development of a teacher ecological self.

As brought out by Esbjörn-Hargens & Zimmerman, fully understanding the mechanism of ecological self and ‘guaranteeing’ the emergence of certain ecological self in a specific setting may probably be out of our reach but the attempt to do that is a value in itself. Reitan (1996) adds to that attempt that a person with realised ecological self is a person with virtue, striving for ecological and environmental justice and stewardship because of inner inclination, not just out of obligation (p. 424) or responsibility, which makes the journey towards broadening teacher ecological self as a value in itself. This means that one task for teacher education is to nurture such an inclination, motivation and intention. According to Besthorn (2002, p. 53), ecological self suggests that nature constitutes both the beginning and the ongoing essence of full human development and potential. He says that the contemporary self is also identified with our personal or individual frame of reference, self being that represents unique individual qualities often associated with the one’s physical attributes or abilities (ibid., p. 56), which suggests that every ecological self is unique and not easily subjected to categorisations or modelling.

	Type of Ethos	Environmental Ethic	Ecological Violation
Eco-Sage (Unity Ethos)	An ego-aware self who integrates multimodal and multidimensional elements across contexts in the service of humanity. Does not judge others. Experiences the world as an immanent expression of timeless spirit.	Experiences the unity of all and identifies with the totality of manifest creation.	Is too otherworldly. Can be disembodied and removed from pragmatic action in the world.
Eco-Integralist (Inclusive Ethos)	Opening the heart to widespread suffering around the planet without being consumed by it. Committed to the integration of transcendence and innocence.	Honours and integrates multiple approaches to the environment. Sees value in all perspectives.	Includes too much and gets bogged down in conflicting views.
Eco-Holist (Holistic Ethos)	Autonomous self, embracing many layers of self (including shadow material). Recognises the importance of various, even contradictory values. Holistic-complex perspective towards nature.	Maps the complexity of relationships within and between ecosystems.	Overrelies on exterior systems and, as a result, commits subtle reductionism.
Eco-Radical (Equality Ethos)	Individualistic self connected to others. Sensitive to people's experiences. Supplementing objectivity with subjective and holistic approaches. Promotes community, unity, participation.	Promotes eco-social justice. Exposes the disaster of modernity.	Advocates a flatland ecology through guilt and shame tactics. Ignores the dignity of modernity.
Eco-Strategist (Rational Ethos)	Orientation towards scientific empiricism. Value independence and confidence. Emphasises efficiency and efficacy. The world as being measurable.	Conserves resources for consumption over the long term.	Exploits nature as a result of greed and a focus on short-term profits.
Eco-Manager (Stewardship Ethos)	Rule-oriented, gets self-identity from others. Follows the law – either the divine order or the laws of the state. Honour and obedience are prized.	Passes laws and establishes institutions to act as stewards over nature.	Promotes domination of humans over the natural world.
Eco-Warrior (Heroic Ethos)	Focuses on supporting an idea of the self, acting to serve to magnify own status. Lack of trust of others. Emphasises power, possesses macho qualities.	Challenges the system through tactical and non-conventional ways.	Mistakes one's own will for nature's. Can be aggressive: striving to conquer nature.
Eco-Guardian (Romantic Ethos)	Impulsive, balancing good forces against evil dynamics. Focuses on satisfying safety and basic needs. Emphasises magic, ancestral ways, mystery of nature.	Performs rituals to maintain control and power. Sees nature as ensouled.	Is one with aspects of nature but not one with humanity. Approaches nature with slash-and-burn tactics.

Figure 1. The ethos, dignity and disaster of each ecological self. Based on Esbjörn-Hargens & Zimmerman, 2009, pp. 227–236

Still, for the practical purposes of modelling of the learning journey for ecological self/selves, Jakob Saks' work is contributing to such an effort. Saks discusses self-awareness and self-development from an interesting point of view. As many others, he sees the root cause of our ecological crisis in the consciousness and mind of the individual, the deficit in logics of the mind and feelings (empathy), greed, egocentrism, reluctance to do right things, with a right motivation, at the right time, in the right place and above all – doing it with right methods, in a right way (Saks, 2005, p. 18). This process is

characterised by a formula (ibid.) and can also be used as input to design specific teacher identity courses:

IMPULSE–THOUGHT–EMOTION, FEELING–*CHOICE*–WORD–ACT–
CONSEQUENCE–FEEDBACK–NEW IMPULSE.

In this formula ‘choice’ forms a central part that changes an intention into a decision and a decision into action, whereas all actions have consequences. Therefore, the destiny and future of the human being depends on individual and collective choices, which can be addressed in TE as well. Saks illustrates two different approaches to education, where the old approach derives from an ego intention and the new approach from a soul intention (Figure 2) which shows the importance of a spiritual dimension in the development of a mature person.

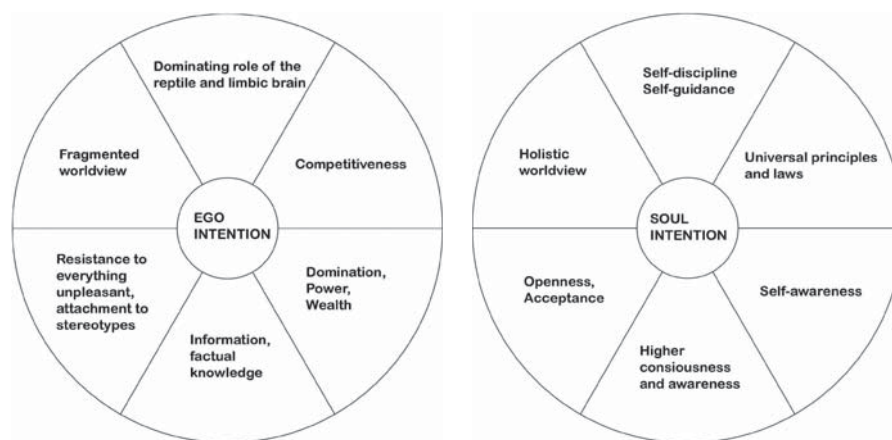


Figure 2. Two approaches to education based on intentions (Saks, 2005)

Considering the argumentation presented above, these models elaborated by Esbjörn-Hargens & Zimmerman (2009) and Saks (2005) may be taken as a basis for supporting the development of teacher ecological self during teacher education although fully realising the inadequacy of incorporating only those.

In addition, Jakob Saks (2005, pp. 19–20) offers a profound list of key features, competencies that are connected to the field of education and personal development, the development of the ecological self:

- Being able to ‘see’ and accept the existence of higher consciousness, becoming aware that love forms the essence and being of the universe and is a creative force in all its dimensions;
- Being aware of and following universal principles and laws;
- Knowing oneself, self-awareness of one’s inner, microworld to be able to know and be aware of the dualistic, outer, macroworld;
- Opening the consciousness, the mind to the existing transformation, acceptance, adequate reacting;
- Broadening the mind and awareness, flexibility and elasticity of mind and consciousness, opening the potential of the heart;
- Developing a holistic worldview;

- Cultivating self-awareness and self-discipline on all levels, horizontal (reality) and vertical (universal, cosmic);
- Acknowledging patriarchic crisis and finding optimal ways to overcome it.

This list well contributes to the sustainability competence described by Arjen Wals (2010, 2015), where sustainability competence is discussed as an integrative switch between five different mind-sets: trans-cultural, trans-spatial, trans-disciplinary, trans-temporal and trans-human mind-sets. In short, this means the ability to see and understand the world from the perspective of different cultures, times and disciplines, understanding the connection between different eras and generations as well as enables to see the world from the position of other species. Supporting the development of such mind-sets and competences forms a part of teacher education programme for SD.

Conclusion and Discussion

The present article attempted to illuminate ways to address teacher identity issues during teacher education in the context of ESD. According to Armstrong and LeHew (2011) we need to empower individual educators to make change at the course level, even if the entire curriculum can not be changed. Such a change should be reframed with the philosophy of sustainability (p. 18) which makes us also ask what kind of teacher identities we aim at. The transformation of our educational systems to support sustainable development is a complex endeavour where changes in solitary methods or tools a teacher uses do not bring along the needed change. It is the teacher him/herself, teacher identity where the change begins. According to Miller (2007), holistic education is based on three main principles: balance, inclusion and connection. Acknowledging the wholeness of the learner, a student teacher in the context of TE, Miller reminds us that teacher development should be a transformational process, transformational learning process hence also the learning process for identity (re)construction. The focus of holistic education is on relationships: the relationship between linear thinking and intuition, the relationship between mind and body, the relationships among various domains of knowledge, the relationship between individual and community, the relationship to the Earth and our relationship to our souls (Miller, 2007, pp. 11–13). Needless to say, that such an approach requires a lot of professional freedom and contributes to increased responsibility for one's own learning. This is especially important in the context of ESD, because realising the pain in the world, the problems and the vastness of crisis may easily cause rejection or denial of the whole agenda. Connecting to one's ecological self means endorsing sustainability and connectedness. Through that we regain something that contributes to our own balance and well-being. Exercising stewardship towards the world does not mean sacrificing our own good, on the contrary, it is returning to our happiness, joy and our authentic, genuine place on this Earth.

Opening up individual potential and consequently also collective potential for sustainable development requires dealing with the ontological, epistemological and methodological considerations in an integrated manner. The key message from different researchers and philosophers is that context and self matter and may make a radical difference for our future. In that attempt, we come to the notion of ecological self. The answer to our personal and collective problems lies in our self, which makes a teacher for future, a teacher for sustainability, an important agent in revealing and supporting the potential of our evolving ecological selves. Despite the array of different constructs,

e.g., ecological self or educational being (e.g., Barnett), we should attempt not to further fragmentise our understanding of the world and ourselves but instead taking a holistic approach, attempt to find similarities and connections in those notions. The implication for teacher education for SD, future teacher's personal and professional development means first and foremost regaining the consciousness of self, negotiating meaning of self-realisation and addressing all aspects of personality potential, where the models developed by Saks and Esbjörn-Hargens & Zimmerman may serve as a tool. We may say that the self emerges, evolves in the process of opening one's potential, which can occur by a person him/herself or with the support of another, e.g., a teacher/teacher educator.

Realising the full potential of self, ecological self, for any person (individual sustainability) that contributes to the realisation of the full potential of the society (collective sustainability) should and could be a priority for TESD.

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